



Dart Aerospace Ltd.
1270 Aberdeen St
Hawkesbury, ON
K6A 1K7
Canada

Tel (613) 632-5200
Fax 613 632-5246

D206-667-103
Job Sheet 196105



Part No: D206-667-103

Job Qty: 1 pcs

Part Name: Fwd Crosstube - High 206L / L1 / L3 / L4



Part Weight: 0 lbs

Status: New

Priority: Medium

Job Created: 6/6/19

Job Tracking No:

Created By: Marie Lajeunesse

Due Date: 7/5/19

Description: SIOP

Type: Stock

Note: DWG DSI9565 REV A , DSI9628 REV A , D206-667-143 REV C (DEO) IPP Rev:F 05.09.01 Add holes for compatibility with Bell Skid tubes KJ/JLM IPP Rev:G 08-06-03 update per DSI9415 (ECN1198) DD IPP Rev: H 08.11.17 QC5 was QC6 at step 12 KJ verified: EC IPP Rev:I 08-12-15 add magnobond DD verified:EC IPP Rev J 09.01.06 ECN 08-562 EC verified:DD IPP Rev:K 09-01-19 as per DSI9439 DD verified:EC IPP REV:L 11.08.05 PER ECN 11-615 DD VERF:EC IPP REV:M 12.08.20 DSI9628 revA (ECN12-631) DD VERF:JLM

Ship Via:

Bill of Materials

Job Routing

Op No	Operation	Qty	Start Date	Due Date	Standard		Workcenter/Supplier		Sign-off
					Setup Hrs	Run Hrs	Workcenter / Supplier	Lead Time	
110	Packaging 1 - Pick Kit	1 pcs		7/5/19	0.00	0.00	Packaging 1 - 1		
							Packaging 1 - 2		
							Packaging 1 - 3		
							Packaging 1 - 4		
							Packaging 1 - 5		
							Packaging 1 - 6		
							Packaging 1 - 7		
							Packaging 1 - 8		
							Packaging 1 - 9		
							Packaging 1 - 10		
							Packaging 1 - 11		
							Packaging 1 - 12		
							Packaging 1 - 13		
							Packaging 1 - 14		
							Packaging 1 - 15		
							Packaging 1 - 16		
							Packaging 1 - 17		
							Packaging 1 - 18		
							Packaging 1 - 19		
							Packaging 1 - 20		
							Packaging 1 - 21		
							Packaging 1 - 22		
							Packaging 1 - 23		
							Packaging 1 - 24		
							Packaging 1 - 25		
							Packaging 1 - 26		
							Packaging 1 - 27		
							Packaging 1 - 28		

N/A
19.06.12

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[Dart Hawkesbury] Job Sheet - Lajeunesse, Marie

					Packaging 1 - 29	
					Packaging 1 - 30	
					Packaging 1 - 31	
					Packaging 1 - 32	
					Packaging 1 - 33	
					Packaging 1 - 34	
					Packaging 1 - 35	
					Packaging 1 - 36	
120	Crosstubes - Bend - 2 - B4B	1 pcs	7/5/19	0.50 1.00	Crosstubes - Bend - B4B	DB Sep 18, 2019
130	QC 15	1 pcs	7/5/19	0.00 0.00	QC 15 - 12	
					QC 15 - 3	
					QC 15 - 47	
					QC 15 - 49	
					QC 15 - 58	
					QC 15 - 9	
					QC 15 - 68	SEP 19 2019 68
140	Crosstubes - 2 - B4B	1 pcs	7/5/19	0.00 4.00	Crosstubes - 1 - B4B	DB Sept, 18, 19
					Crosstubes - 2 - B4B	
					Crosstubes - 3 - B4B	
					Crosstubes - 4 - B4B	
150	Crosstubes - 3 - B4B	1 pcs	7/5/19	0.00 0.31	Crosstubes - 1 - B4B	
					Crosstubes - 2 - B4B	
					Crosstubes - 3 - B4B	DB Sept, 19, 19
					Crosstubes - 4 - B4B	
160	QC 7	1 pcs	7/5/19	0.00 0.00	QC 7 - 10	
					QC 7 - 13	
					QC 7 - 14	
					QC 7 - 15	
					QC 7 - 17	
					QC 7 - 18	
					QC 7 - 19	
					QC 7 - 2	
					QC 7 - 28	
					QC 7 - 3	
					QC 7 - 30	
					QC 7 - 34	
					QC 7 - 36	
					QC 7 - 37	
					QC 7 - 41	
					QC 7 - 47	
					QC 7 - 48	
					QC 7 - 51	
					QC 7 - 58	
					QC 7 - 59	
					QC 7 - 60	
					QC 7 - 9	
					QC 7 - 68	
					QC 7 - 50	
					QC 7 - 67	GP 19-09-19
					QC 7 - 40	
					QC 7 - 24	
					QC 7 - 43	
170	QC 5	1 pcs	7/5/19	0.00 0.00	QC 5 - 10	
					QC 5 - 12	
					QC 5 - 17	
					QC 5 - 18	
					QC 5 - 19	
					QC 5 - 22	

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					QC 5 - 24	
					QC 5 - 3	
					QC 5 - 43	
					QC 5 - 49	
					QC 5 - 51	
					QC 5 - 58	
					QC 5 - 68	SEP 19 2019 ^{DAS} 68
					QC 5 - 9	⁹⁻⁸⁹
					QC 5 - 50	
					QC 5 - 30	
					QC 5 - 40	
180	Outsource - 2 - NDT per QSI038	1 pcs	7/5/19		SKY002-VC	PL 09/30/2019
190	Packaging 2-1 - Receive - B4B	1 pcs	7/5/19	0.00 0.00	Packaging 2 - 1 - B4B	
					Packaging 2 - 2 - B4B	
					Packaging 2 - 3 - B4B	
					Packaging 2 - 5 - B4B	
					Packaging 2 - 4 - B4B	
					Packaging 2 - 6 - B4B	
					Packaging 2 - 7 - B4B	
					Packaging 2 - 8 - B4B	
					Packaging 2 - 9 - B4B	
					Packaging 2 - 10 - B4B	
					Packaging 2 - 11 - B4B	
					Packaging 2 - 12 - B4B	
					Packaging 2 - 13 - B4B	^{DP} SEP 20 2019
					Packaging 2 - 14 - B4B	
					Packaging 2 - 15 - B4B	
					Packaging 2 - 16 - B4B	
					Packaging 2 - 17 - B4B	
					Packaging 2 - 18 - B4B	
					Packaging 2 - 19 - B4B	
					Packaging 2 - 20 - B4B	
					Packaging 2 - 21 - B4B	
					Packaging 2 - 22 - B4B	
					Packaging 2 - 23 - B4B	
					Packaging 2 - 24 - B4B	
					Packaging 2 - 25 - B4B	
					Packaging 2 - 26 - B4B	
					Packaging 2 - 27 - B4B	
					Packaging 2 - 28 - B4B	
					Packaging 2 - 29 - B4B	
					Packaging 2 - 30 - B4B	
					Packaging 2 - 31 - B4B	
					Packaging 2 - 32 - B4B	
					Packaging 2 - 33 - B4B	
					Packaging 2 - 34 - B4B	
					Packaging 2 - 35 - B4B	
					Packaging 2 - 36 - B4B	
200	QC 5	1 pcs	7/5/19	0.00 0.00	QC 5 - 10	
					QC 5 - 12	
					QC 5 - 17	
					QC 5 - 18	
					QC 5 - 19	
					QC 5 - 22	
					QC 5 - 24	
					QC 5 - 3	
					QC 5 - 43	
					QC 5 - 49	

					QC 5 - 51	
					QC 5 - 58	
					QC 5 - 68	
					QC 5 - 9	
					QC 5 - 50	
					QC 5 - 30	
					QC 5 - 40	SEP 23 2019 DAS 68 9-89
210 Spray Paint - 2 - B4B	1 pcs	7/5/19	0.00 0.25		Spray Paint - 1 - B4B	• A 19-9-21
					Spray Paint - 2 - B4B	
					Spray Paint - 3 - B4B	
					Spray Paint - 4 - B4B	
220 QC 14	1 pcs	7/5/19	0.00 0.00		QC 14 - 15	
					QC 14 - 2	
					QC 14 - 34	
					QC 14 - 41	
					QC 14 - 51	
					QC 14 - 58	
					QC 14 - 59	
					QC 14 - 9	
					QC 14 - 68	SEP 25 2019 DAS 68 9-89
					QC 14 - 40	
					QC 14 - 19	
					QC 14 - 43	
					QC 14 - 24	
230 Crosstubes - 4 - B4B	1 pcs	7/5/19	0.00 1.33		Crosstubes - 1 - B4B	
					Crosstubes - 2 - B4B	
					Crosstubes - 3 - B4B	
					Crosstubes - 4 - B4B	• A 19-9-22
240 QC 5	1 pcs	7/5/19	0.00 0.00		QC 5 - 10	
					QC 5 - 12	
					QC 5 - 17	
					QC 5 - 18	
					QC 5 - 19	
					QC 5 - 22	
					QC 5 - 24	
					QC 5 - 3	
					QC 5 - 43	
					QC 5 - 49	
					QC 5 - 51	
					QC 5 - 58	
					QC 5 - 68	SEP 30 2019 DAS 68 9-89
					QC 5 - 9	
					QC 5 - 50	
					QC 5 - 30	
					QC 5 - 40	
250 Packaging 1-1 - Pick Kit - B4B	1 pcs	7/5/19	0.00 0.00		Packaging 1 - 1 - B4B	
					Packaging 1 - 2 - B4B	
					Packaging 1 - 3 - B4B	
					Packaging 1 - 4 - B4B	
					Packaging 1 - 5 - B4B	
					Packaging 1 - 6 - B4B	
					Packaging 1 - 7 - B4B	
					Packaging 1 - 8 - B4B	
					Packaging 1 - 9 - B4B	
					Packaging 1 - 10 - B4B	
					Packaging 1 - 11 - B4B	
					Packaging 1 - 12 - B4B	
					Packaging 1 - 13 - B4B	
					Packaging 1 - 14 - B4B	

				Packaging 1 - 15 - B4B	
				Packaging 1 - 16 - B4B	
				Packaging 1 - 17 - B4B	
				Packaging 1 - 18 - B4B	
				Packaging 1 - 19 - B4B	
				Packaging 1 - 20 - B4B	
				Packaging 1 - 21 - B4B	
				Packaging 1 - 22 - B4B	
				Packaging 1 - 23 - B4B	PC OCT 07 2019
				Packaging 1 - 24 - B4B	
				Packaging 1 - 25 - B4B	
				Packaging 1 - 26 - B4B	
				Packaging 1 - 27 - B4B	
				Packaging 1 - 28 - B4B	
				Packaging 1 - 29 - B4B	
				Packaging 1 - 30 - B4B	
				Packaging 1 - 31 - B4B	
				Packaging 1 - 32 - B4B	
				Packaging 1 - 33 - B4B	
				Packaging 1 - 34 - B4B	
				Packaging 1 - 35 - B4B	
				Packaging 1 - 36	
260 QC 4	1 pcs	7/5/19	0.00 0.00	QC 4 - 28	
				QC 4 - 58	
				QC 4 - 69	
				QC 4 - 9	
				QC 4 - 46	
				QC 4 - 68	DAS
				QC 4 - 72	78
				QC 4 - 74	9-89
270 Packaging 3-1 - Stock - B4B	1 pcs	7/5/19	0.00 0.00	Packaging 3 - 1 - B4B	
				Packaging 3 - 2 - B4B	
				Packaging 3 - 3 - B4B	
				Packaging 3 - 4 - B4B	
				Packaging 3 - 5 - B4B	
				Packaging 3 - 6 - B4B	
				Packaging 3 - 7 - B4B	
				Packaging 3 - 8 - B4B	
				Packaging 3 - 9 - B4B	
				Packaging 3 - 10 - B4B	
				Packaging 3 - 11 - B4B	
				Packaging 3 - 12 - B4B	
				Packaging 3 - 13 - B4B	
				Packaging 3 - 14 - B4B	
				Packaging 3 - 15 - B4B	
				Packaging 3 - 16 - B4B	
				Packaging 3 - 17 - B4B	
				Packaging 3 - 18 - B4B	
				Packaging 3 - 19 - B4B	
				Packaging 3 - 20 - B4B	
				Packaging 3 - 21 - B4B	
				Packaging 3 - 22 - B4B	
				Packaging 3 - 23 - B4B	
				Packaging 3 - 24 - B4B	DAS
				Packaging 3 - 25 - B4B	78
				Packaging 3 - 26 - B4B	9-89
				Packaging 3 - 27 - B4B	
				Packaging 3 - 28 - B4B	
				Packaging 3 - 29 - B4B	

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				Packaging 3 - 30 - B4B	
				Packaging 3 - 31 - B4B	
				Packaging 3 - 32 - B4B	
				Packaging 3 - 33 - B4B	
				Packaging 3 - 34 - B4B	
				Packaging 3 - 35 - B4B	
				Packaging 3 - 36 - B4B	
275 DC - 1 - B4B	1 pcs	7/5/19	0.00 0.00	DC - 1 - B4B	DAS 21 OCT 07 2019
				DC - 2 - B4B	9-89
280 QC 21 - FG	1 pcs	7/5/19	0.00 0.00	QC 21 - FG - 21	DAS 21 OCT 07 2019
				QC 21 - FG - 70	9-89
				QC 21 - SA - 53	9-89

Part Op 110 - pick kit

Descriptions: 120 - CNC Alpha 160 Bender - Bend tube as per Dwg D206-667-143 using CNC bender program

130 - QC15- Crosstube Dimensional Check

140 - Crosstubes ***** ENSURE PROPER JIG POSITIONING BEFORE DRILLING***** , VERIFIED

BY: ***** 1- Drill holes & ream using drill Jig DT8541 & DT8542 as per Dwg D206-667-143. Drill all (3) top holes. Holes facing inboard. ***** ENSURE PROPER JIG POSITIONING BEFORE DRILLING***** , VERIFIED

BY: ***** 2- Drill Fwd rivet holes using drill Jig DT8787 fwd as per Dwg D206-667-143. Note: Fwd side has 3x top holes. Facing inboard. 3- C'sink holes as per Dwg D206-667-143. Allow rivet to sit below surface to compensate for paint. 4- Flip tube and switch drilling Jigs from right to left, left to right. Locate Jigs off existing holes using "T" pins. Drill ONLY 2 top holes ONLY plug most bottom holes to prevent accidental drilling. Drill holes and ream using drill Jig DT8541 & DT8542 as per Dwg D206-667-143. Drill only the top (2) holes. 5- Drill Aft rivet holes using drill Jig DT8787 aft as per Dwg D206-667-143. 6- C'sink holes as per Dwg D206-667-147. Allow rivet to sit below surface to compensate for paint. 7- Scribe part # and batch # using vibrating stylus as per Dwg D206-667-143 inside of Cuff (Do not engrave on outside of tube) 8- *** WEAR LATEX GLOVES WHEN HANDLING CROSSTUBE*** Deburr & Inspect for surface damage. Repair damage within limits as per Dwg D206-667-143

150 - Crosstubes Chemical Conversion ***IMMEDIATELY AFTER GRINDING***

160 - QC7-Inspect Chemical Conversion Coat

170 - QC5- Inspect part completeness to step on W/O

180 - Outsource process - NDT per QSI038 4.1 - *** WEAR LATEX GLOVES WHEN HANDLING CROSSTUBE***

190 - Receive & Inspect for Damage & Mat'l Certs - *** WEAR LATEX GLOVES WHEN HANDLING CROSSTUBE***

200 - QC5- Inspect part completeness to step on W/O - *** WEAR LATEX GLOVES WHEN HANDLING CROSSTUBE***

210 - *Spray Paint / NDT Room - ** WEAR LATEX GLOVES WHEN HANDLING CROSSTUBE*** ** MASK AREA UNDER CLAMP PRIOR TO PAINTING AS PER DWG DEO*** 1-Prime inside and outside crosstube as per QSI 005 4.2 2-Paint outside crosstube with White Imron as per QSI 005 4.2 PRIME: 5189223 Start Time: _____ Finish Time: _____ PAINT: 5204422

Time: _____ PAINT: 5204422

220 - QC14- Inspect Spray Paint - Wrap in plastic bag to protect from scratches

230 - Crosstubes - 2-Install supports with Proseal 890 per D206-667-143 (DEO) and QSI 015 3-Install supports clamps Using Dt9565 as per Dwg D206-667-143 (DEO), Torque to 80-100 IN-LBS. 4-Install nut plates as per Dwg D206-667-143. Touch-up rivet heads with Imron paint. 5176610 exp 10/19

240 - QC5- Inspect part completeness to step on W/O - ***RE-CHECK TORCQUE ON CLAMP AFTER PROSEAL HAS CURED FOR 72HOURS AS PER DWG.*** **VERIFY RESISTANCE PER NOTE 18 AND DWG DEO***

250 - Pick Kit

260 - QC4- 100% Inspect kits for completeness - ***VERIFY BY _____ BATCH # TO MATCH W/O

270 - Identify and pack for shipping as per PPP D206-667-103 Location : FG103

275 - Document Control - Photocopy bluefile and create labels as per PPP D206-667-103 CHG006

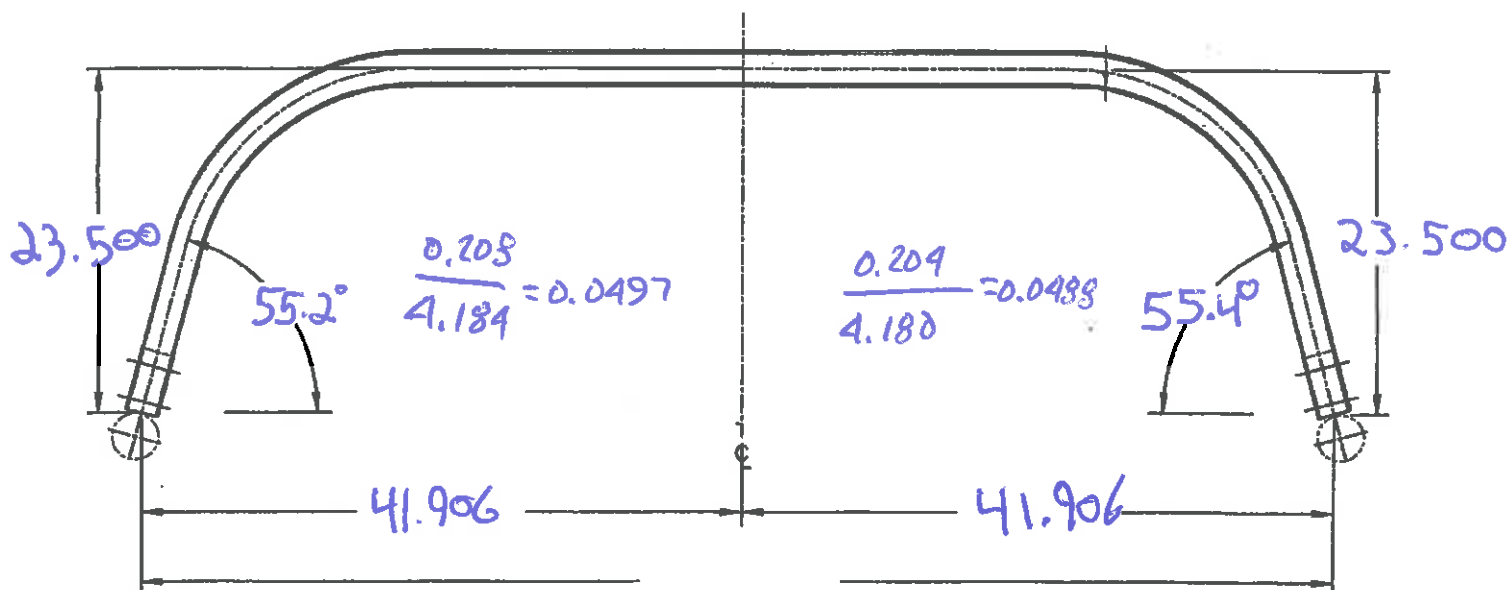
280 - QC21- Final Inspection - Work Order Release

Job BOM				
Part / Item	Component Name	Quantity	Operation	Container
D206-667-103TRN	Crosstube Turning Detail	1 pcs (1 ea)	110-Packaging 1 - Pick Kit	5191646
D2873-043	Nut Plate Assembly	2 pcs (2 ea)	230-Crosstubes - 4 - B4B	
D2873-045	Nut Plate Assembly	2 pcs (2 ea)	230-Crosstubes - 4 - B4B	
D2891-1	Support 2.25	2 pcs (2 ea)	230-Crosstubes - 4 - B4B	
D3595-063-395	Rubber Cushion 0.63" Wide X 3.95" Long	4 pcs (4 ea)	230-Crosstubes - 4 - B4B	
MS20601-AD4W8	Rivet	14 Ea (14 ea)	230-Crosstubes - 4 - B4B	
MS21920-20	Clamp	4 Ea (4 ea)	230-Crosstubes - 4 - B4B	
AN742D36	Plain Clamp Loop	2 Ea (2 ea)	230-Crosstubes - 4 - B4B	
MS21042-3	Nut use MS21042L3 per QSI 017	2 Ea (2 ea)	230-Crosstubes - 4 - B4B	
MS27039-1-08	Screw	2 Ea (2 ea)	230-Crosstubes - 4 - B4B	
MS9165-05	Bracket	2 Ea (2 ea)	230-Crosstubes - 4 - B4B	
NAS1149C0332R	Washer	4 Ea (4 ea)	230-Crosstubes - 4 - B4B	
AN5-30A	Bolt	4 Ea (4 ea)	250-Packaging 1-1 - Pick Kit - B4B	5166980
AN5-32A	Bolt	4 Ea (4 ea)	250-Packaging 1-1 - Pick Kit - B4B	5119958
AN5-7A	Bolt	10 Ea (10 ea)	250-Packaging 1-1 - Pick Kit - B4B	51123355x7 FM 1190/7x3
AN970-4	Washer	12 Ea (12 ea)	250-Packaging 1-1 - Pick Kit - B4B	520267149 5216018x1
MS21042L5	Nut	4 Ea (4 ea)	250-Packaging 1-1 - Pick Kit - B4B	5208332
NAS1149D0563J	Washer	18 Ea (18 ea)	250-Packaging 1-1 - Pick Kit - B4B	51742488
Job Allocations				
Operation	Component Part	Required	Inventory	Allocated
110-Packaging 1 - Pick Kit	D206-667-103TRN	1	0	0
230-Crosstubes - 4 - B4B	AN742D36	2	45	0
	D2873-043 5200898	②	51	0
	D2873-045 5186342	②	48	0
	D2891-1 5190655	②	16	0
	D3595-063-395 5219262	④	63	0
	MS20601-AD4W8 5155662	④	198	0
	MS21042-3	2	554	0
	MS21920-20 5102843	④	105	0
	MS27039-1-08	2	467	0
	MS9165-05	2	39	0
	NAS1149C0332R	4	2,916	0
250-Packaging 1-1 - Pick Kit - B4B	AN5-30A	4	52	0
	AN5-32A	4	329	0
	AN5-7A	10	3,092	0
	AN970-4	12	87	0
	MS21042L5	4	625	0
	NAS1149D0563J	18	2,648	0
Part Specifications				
Specifications could not be found.				

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DART AEROSPACE LTD		Work Order:	196105
Description: Crosstube High Fwd (206L)		Part Number:	D206-667-103
Inspection Dwg: D206-667-143	Rev: C	Page 1 of 1	

Required Dimension	Min	Max
Height	23.39	23.65
1/2 Span	41.79	42.05
Angle	54	56
Total Span	83.58	84.10
Bending Passes	10	--
Crushing	--	6%



1.988
2.196

	Side A	Side B
Bending Passes		
Crushing	5%	4.9%
Comments		

1.988
2.192

QC15 Inspection	
Date	

Rev	Date	Change	Revised by	Approved
A	07.02.06	New Issue	KJ/JM	
B	09.06.26	Dimensions updated per Dwg Rev C	KJ	
C	09.10.22	Minimum height dimension revised	KJ	
D	12.04.16	Added bending, crushing dimensions	KJ	

Item	Qty	Part Number	Description
1	X	D208-887-143	CROSSTUBE ASSEMBLY (208L HIGH FWD)
2	1	D6002-115	CROSSTUBE
3	2	D2873-043	NUT PLATE
4	2	D2873-045	NUT PLATE
5	2	D2881-1	SUPPORT
6	4	D3585-063-385	RUBBER CUSHION
7	4	MS21920-20	CLAMP (OR MS21920-21)
8	14	MS20601AD4W8	RIVET (OR NAS9302B-4-8)
9	AIR	PROSEAL 880 B-2	SEALANT, AMS-S-8802 CLASS B-2
10	2	AN742D36	CLAMP
11	2	MS9165-05	ANGLE BRACKET
12	2	MS21042L3	NUT (OR MS21042-3)
13	2	MS27038-1-08	SCREW
14	4	NAS1149C0332R	WASHER (OR AN660C101)

GENERAL NOTES:

- 1) MATERIAL: MANUFACTURED FROM D6002-115
FINISHED LENGTH = 104.9850.020
- 2) FINISH: CHEMICAL CONVERSION COAT PER DART QSI 005 4.1
PRIME INSIDE AND OUTSIDE PER DART QSI 005 4.2
PAINT OUTSIDE PER DART QSI 005 4.2
- 3) TOLERANCES ARE PER DART QSI 018 UNLESS OTHERWISE NOTED.
- 4) UNITS: INCHES UNLESS OTHERWISE NOTED.
- 5) BREAK SHARP EDGES: 0.005 TO 0.010 MAX.
- 6) IDENTIFICATION: SCRIBE DART PART NUMBER "D208-887-143" AND BATCH NUMBER ON INSIDE OF CUFF USING VIBRATING STYLUS.
- 7) WEIGHT: 15.5 lbs
- 8) PART IS SYMMETRIC ABOUT CENTERLINE.
- 9) RUN CUTTER OFF PART WHERE INDICATED. BLEND OUT EDGE LONGITUDINALLY, TRANSITION SHOULD BE SMOOTH.
- 10) BEND PROGRESSIVELY WITH A MINIMUM OF 10 PASSES. MAXIMUM TUBE FLATTENING DUE TO BENDING IS 8% BASED ON O.D.
- 11) LIQUID PENETRANT INSPECT OUTSIDE SURFACE OF CROSSTUBE PER QSI 038.
- 12) TO INSTALL D2881-1 SUPPORT: ABRASE MATING SURFACE OF SUPPORT AND CROSSTUBE WITH 180-GRIT SANDPAPER AND REMOVE RESIDUE WITH MEK (OR EQUIVALENT). APPLY A 0.04" TO 0.07" THICK LAYER OF PROSEAL 880 CLASS B-2 (OR AMS-S-8802 CLASS B-2) SEALANT TO MATING SURFACE OF SUPPORT.
- 13) INSTALL MS21920-20 CLAMPS (OR -21) WITH D3585-063-385 RUBBER CUSHIONS TO SECURE THE D2881-1 SUPPORT ON TOP SIDE OF THE CROSSTUBE. ENSURE CLAMP MECHANISMS ARE LOCATED ON CROSSTUBE SUPPORTS.
- 14) EXTREME CARE MUST BE TAKEN TO PROTECT THE OUTSIDE SURFACE OF THE TUBE. THE OUTSIDE SURFACE MUST BE SMOOTH AND FREE FROM SURFACE DEFECTS SUCH AS SCRATCHES, NICKS, OR DENTS. DEFECTS UP TO 0.005" MAY BE BLENDED OUT LONGITUDINALLY. CIRCUMFERENTIAL GRIND MARKS ARE UNACCEPTABLE.
- 15) TORQUE CLAMPS 80 TO 100 IN-LB. ENSURE AT LEAST 1.5 THREADS ARE SHOWING IN SAFETY AND THAT NUT HAS NOT BOTTOMED-OUT AFTER TORQUING. PRIOR TO PACKAGING, RE-CHECK TORQUE ON CLAMPS AFTER PROSEAL 880 SEALANT HAS CURED FOR 72 HOURS. MASK AREA UNDER CLAMP PRIOR TO PAINTING.
- 16) SEAL EDGES WHERE AN742D36 CLAMP MEETS WITH THE CROSSTUBE USING SIKAFLEX-241/-291 OR MIL-S-8802 CLASS B2 OR PROSEAL 880 SEALANT.
- 17) PERFORM RESISTANCE CHECK TO ENSURE MAX RESISTANCE IS 10 MILLIOHMS.

RELEASED

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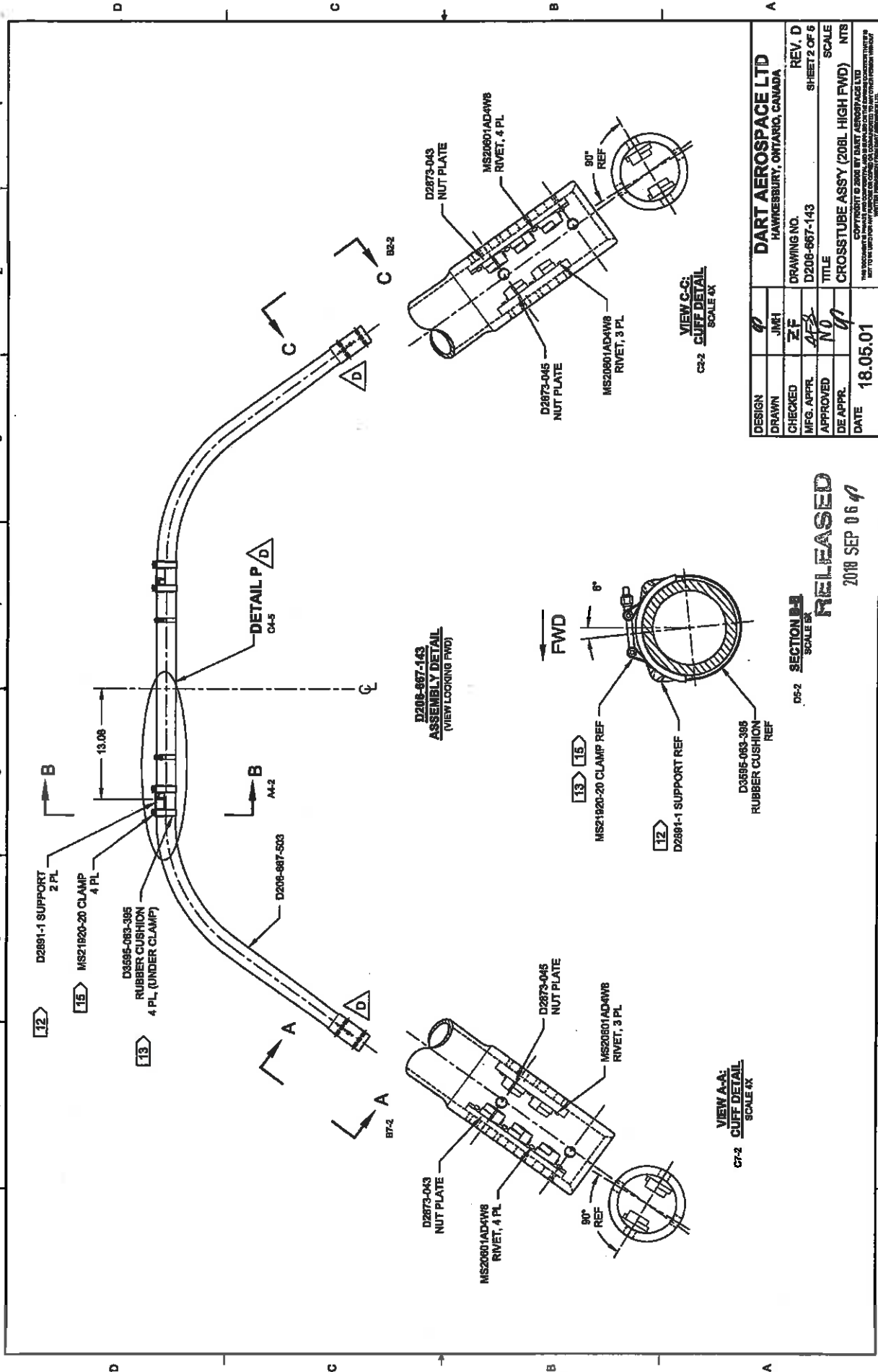
WORK ORDER

NO. *190605* *MS*

19-06-06

D	REVISE SHEET 2 ASSEMBLY DETAIL, HOLE PATTERN PER CAR18-221. UPDATE PARTS LIST AND GENERAL NOTES 12 & 18 TO INCORPORATE DEO C-1. ADD ITEMS 10-14 TO PARTS LIST, ADD GENERAL NOTES 16-18 AND ADD SHEET 5 TO INCORPORATE DEO C-2.	JMH	18.05.01
C	REVISE GENERAL NOTES PART LIST (21 D7-1); REORGANIZED VIEWS AND REFORMATTED DRAWING TO CURRENT STANDARDS. D3585-063-385 WAS D2858-400-884 (21 D6-2 & AS-2); REMOVED REF. & ADD TOLERANCE (21 D6-3); CH-1 (CS-3); RELOCATED FLAG W (21 AS-3) PER NCR 216; MOVED TURNING DETAIL & UPDATED TOLERANCE TO SHEET 4.	RF	08.11.06
B	ADD HOLES AND NUT PLATES FOR COMPATIBILITY WITH BHTMA SKIDTUBES	PH	05.07.28
A	NEW ISSUE	CP	08.11.17
REV.	DESCRIPTION	BY	DATE
DESIGN			
DRAWN	JMH		
CHECKED	JMH		
INFS. APPR.	<i>RF</i>		
APPROVED	<i>RF</i>		
DE APPR.	<i>RF</i>		
DATE	18.05.01		
DART AEROSPACE LTD HAWKESBURY, ONTARIO, CANADA DRAWING NO. <i>D208-887-143</i> REV. D SHEET 1 OF 8 TITLE CROSSTUBE ASSY (208L HIGH FWD) SCALE NTS COPYRIGHT © 2008 BY DART AEROSPACE LTD THIS DRAWING IS THE PROPERTY OF DART AEROSPACE LTD NOT TO BE REPRODUCED OR TRANSMITTED IN ANY FORM OR BY ANY MEANS WITHOUT THE WRITTEN PERMISSION OF DART AEROSPACE LTD			

1 2 3 4 5 6 7 8

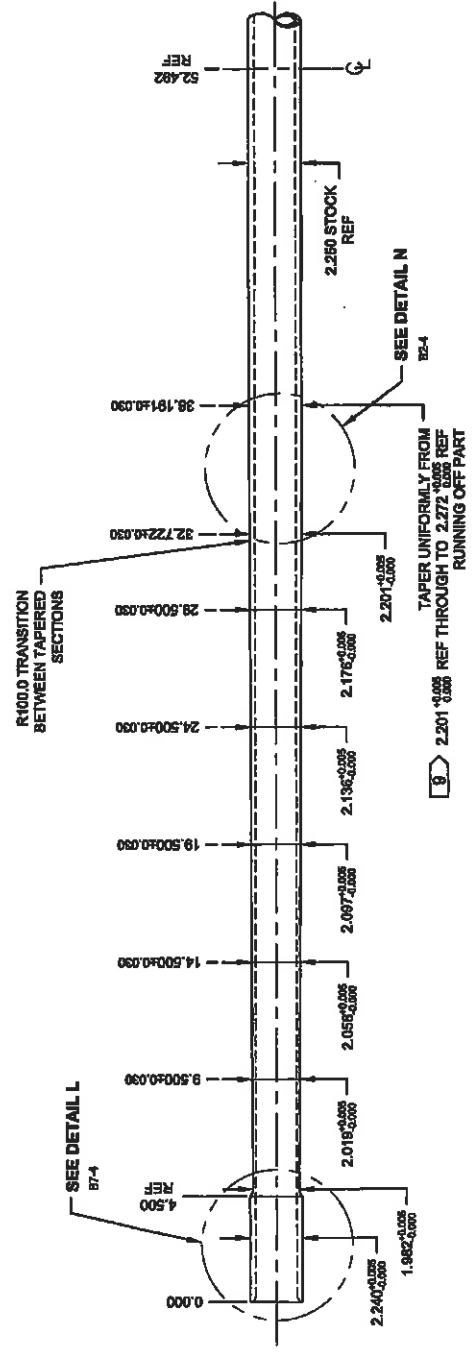


DESIGN	0	JNH	DART AEROSPACE LTD HAWKESBURY, ONTARIO, CANADA
DRAWN	ZF		REV. D
CHECKED	ZF		DRAWING NO.
MFG. APPL.	4F		D208-867-143
APPROVED	N		SHEET 2 OF 6
DE APPR.	0		TITLE
DATE	18.05.01		CROSSTUBE ASSY (208L HIGH FWD) NTS

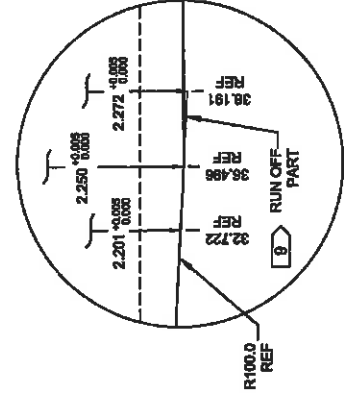
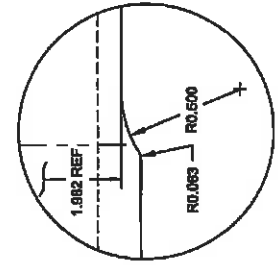
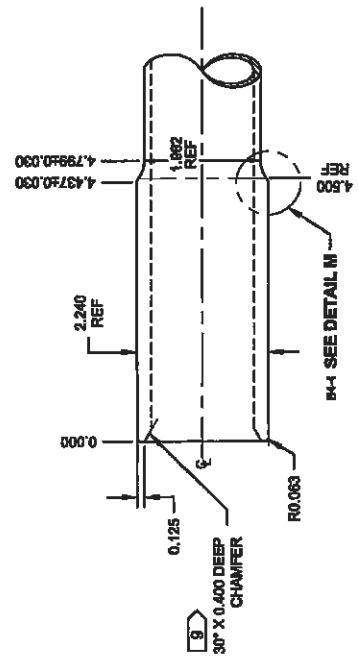
RELEASED
2018 SEP 06
SECTION B-B
SCALE B

1 2 3 4 5 6 7 8

8 7 6 5 4 3 2 1



TURNING DETAIL



DETAIL N:
TAPER RUN-OFF
NOT TO SCALE

DETAIL L:
CROSSTUBE CUFF
NOT TO SCALE

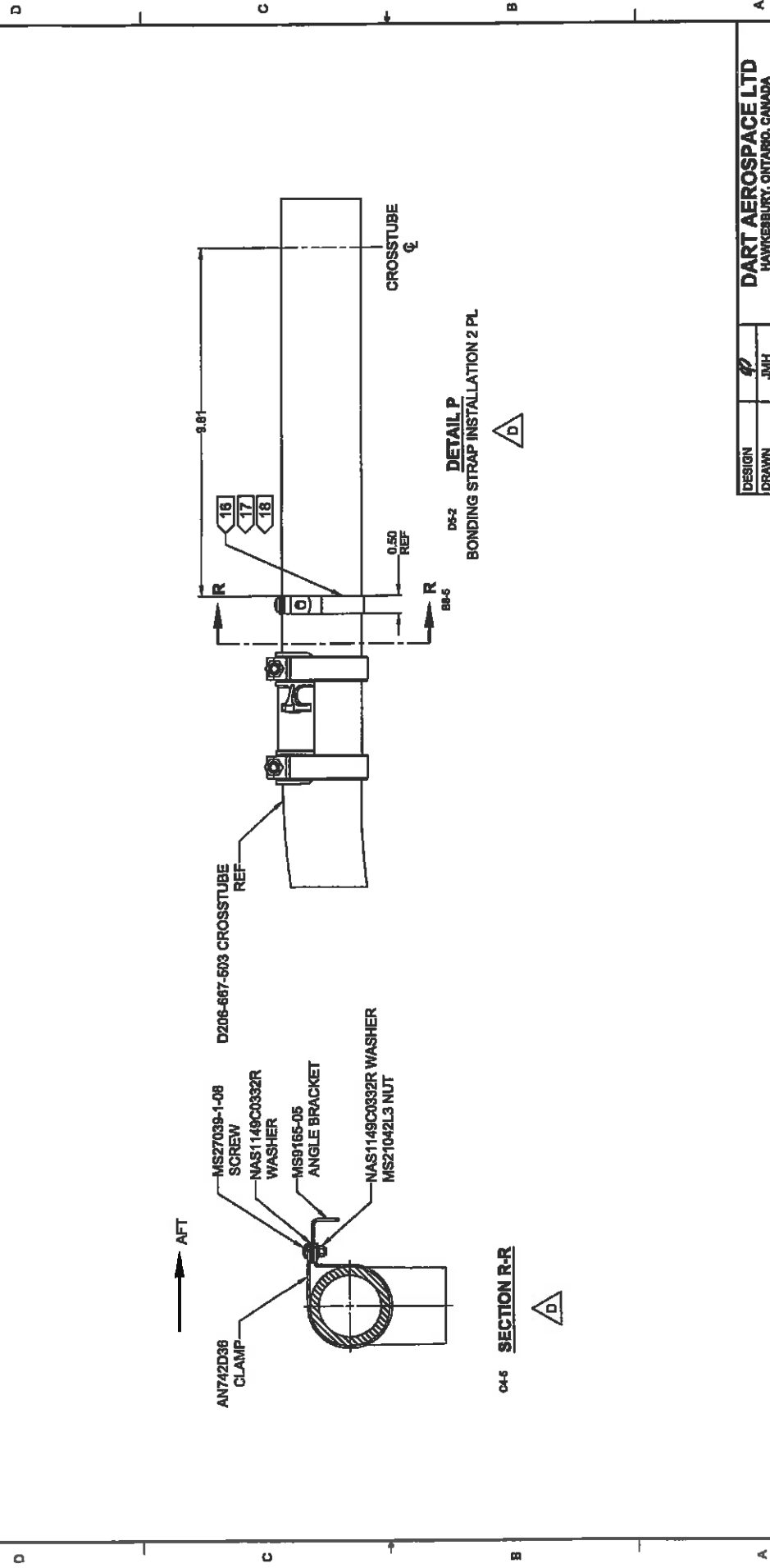
DETAIL M:
CUFF TRANSITION
NOT TO SCALE

DESIGN	φ	DART AEROSPACE LTD
DRAWN	JMH	HAWKESBURY, ONTARIO, CANADA
CHECKED	ZF	DRAWING NO. D208-067-143
INFO. APPR.	AFB	REV. D SHEET 4 OF 5
APPROVED	N/A	SCALE
DE APPR.	φ	TITLE CROSSTUBE ASSY (208L HIGH FWD) NTS
DATE	18.05.01	COPYRIGHT © 2000 BY DART AEROSPACE LTD

RELEASED
2018 SEP 06

8 7 6 5 4 3 2 1

1 2 3 4 5 6 7 8



DESIGN	φ	DART AEROSPACE LTD
DRAWN	JMH	HAWKESBURY, ONTARIO, CANADA
CHECKED	ZF	DRAWING NO. D206-667-143
MPG. APPR.	ZF	REV. D
APPROVED	NB	SHEET 5 OF 5
DE APPR.	φ	SCALE
DATE	18.05.01	CROSSTUBE ASSY (206L HIGH FWD) NTS

RELEASED
2018 SEP 06/φ

1 2 3 4 5 6 7 8

Entered: _____

Date: _____

WORK ORDER NON-CONFORMANCE / ROUTE UPDATE

NCR No. _____

Route update only ☐

Job: _____ Part No. _____		DISPOSITION ☐ Rework ☐ Scrap ☐ Use-as-is ☐ Skid-tube ☐ Machining ☐ Large Fab ☐ Cross tube ☐ Small Fab ☐ Finishing ☐ Eng. (Non-AW) ☐ Prod. Eng. Coord. ☐ Rec/Store/Packaging ☐ Engineering ☐ Water Jet ☐ Supplier ☐ Quality		DEPARTMENT/PROCESS		MRB (QSI042)	
Date : _____		Sequence #: _____		QTY Affected : _____			
Description Work Order Deviation		Disposition					
Completed By		Lead hand / Supervisor					
QC / QA Coordinator		_____					

Root Cause ☐ Operator ☐ Manufacturing Process ☐ Equip/Tooling ☐ Handling/Preservation ☐ Material ☐ Product Improvement ☐ Process Improvement ☐ Human Factors ☐ Pressure/Forced ☐ Bending ☐ Crushing ☐ Cracks ☐ Crimp/Kink/Ripple/Wave/Twist ☐ Marks/Chatter ☐ Mislabeled Other/Details: _____		FAULT CATEGORY ☐ Contamination ☐ Misaligned/off center ☐ BOM/Route ☐ Broken/Damage/Defect ☐ Incomplete/Unclear Instructions ☐ Drill Holes ☐ Fit/Function ☐ Power Loss/Surge ☐ Folio/Program ☐ Grain Direction ☐ Weld ☐ Wrong Stock Pulled ☐ Out of Sequence ☐ Off-set/Set-up	
☐ Positioned Wrong ☐ Outside Tolerance ☐ Drawing ☐ Finish ☐ Part Lost/Missing ☐ Misread			

PURCHASE ORDER



Dart Aerospace Ltd.
1270 Aberdeen St
Hawkesbury, ON
K6A 1K7
Canada

Tel (613) 632-5200

PURCHASE ORDER

POHB044535



Supplier: SKY002-VC
Skyservice
6120 Midfield Road
Mississauga
ON
L5P 1B1 Canada
Phone: 905-678-5636
Fax: 905-678-5841

Attention: Jenne, Heather

Ship To: 1270 Aberdeen Street
Hawkesbury
ON
K6A 1K7 Canada
Phone: 613-632-5200

PO No: POHB044535

PO Date: 9/19/19

Due Date: 9/20/19

Purchase Order

Revision:

Revision Date:

Ship-To Contact: Phone:

Via: Ground

Pymt Terms: Net 30

Freight Terms:

Special Comments:

Items

Line Item	Job	Part	Description	Status	Account	Due Date	Order Quantity	Received Quantity	Balance	Unit Price (CAD)	Extended Price
1	196105	D206-667-103	Fwd Crosstube - High 206L / L1 / L3 / L4 : TC STC SH01-5 Issue 3, FAA STC SR01304NY 05/12/15, JCAB JAPAN STC-32-OSA 02/02/28, EASA STC EASA.IM.R.S.01179 06/07/03, BRAZIL 2009S08-16 09/08/25, BRAZIL 2009S08-17 09/08/25 Outsource process - NDT per QSI038 4.1 - *** WEAR LATEX GLOVES WHEN HANDLING CROSSTUBE***	Firmed	-	9/20/19	1 pcs	0 pcs	1 pcs	\$152.50/pcs	\$152.50
2	196106	D206-667-103	Fwd Crosstube - High 206L / L1 / L3 / L4 : TC STC SH01-5 Issue 3, FAA STC SR01304NY 05/12/15, JCAB JAPAN STC-32-OSA 02/02/28, EASA STC EASA.IM.R.S.01179 06/07/03, BRAZIL 2009S08-16 09/08/25, BRAZIL 2009S08-17 09/08/25 Outsource process - NDT per QSI038 4.1 - *** WEAR LATEX GLOVES WHEN HANDLING CROSSTUBE***	Firmed	-	9/20/19	1 pcs	0 pcs	1 pcs	\$152.50/pcs	\$152.50

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Dart Aerospace Ltd.
1270 Aberdeen St
Hawkesbury, ON
K6A 1K7
Canada

Tel (613) 632-5200

PURCHASE ORDER

POHB044535



Items											
Line Item	Job	Part	Description	Status	Account	Due Date	Order Quantity	Received Quantity	Balance	Unit Price (CAD)	Extended Price
3	200061	D206-667-207BL	Aft Crosstube - Mid Height 206L / L1 / L3 / L4, Blue : TC STC SH01-5 Issue 3, FAA STC SR01304NY 05/12/15, JCAB JAPAN STC- 32-OSA 02/02/28, EASA STC EASA.IM.R.S.01179 06/07/03, BRAZIL 2009S08-16 09/08/25, BRAZIL 2009S08-17 09/08/25 Outsource process - NDT per QSI038 4.1 *** WEAR LATEX GLOVES WHEN HANDLING CROSSTUBE*** Liquid Penetrant Inspection as per QSI 038Or Issue P/O: _____ LPI as per ASTM 1417 Level 2 Attach copy of NDT results to work order	Firmed	-	9/20/19	1 pcs	0 pcs	1 pcs	\$152.50/pcs	\$152.50
4	200062	D206-667-207BL	Aft Crosstube - Mid Height 206L / L1 / L3 / L4, Blue : TC STC SH01-5 Issue 3, FAA STC SR01304NY 05/12/15, JCAB JAPAN STC- 32-OSA 02/02/28, EASA STC EASA.IM.R.S.01179 06/07/03, BRAZIL 2009S08-16 09/08/25, BRAZIL 2009S08-17 09/08/25 Outsource process - NDT per QSI038 4.1 *** WEAR LATEX GLOVES WHEN HANDLING CROSSTUBE*** Liquid Penetrant Inspection as per QSI 038Or Issue P/O: _____ LPI as per ASTM 1417 Level 2 Attach copy of NDT results to work order	Firmed	-	9/20/19	1 pcs	0 pcs	1 pcs	\$152.50/pcs	\$152.50
5	199238	D212-664-101	Fwd Crosstube - High : TC STC SH01-9 Issue 3, FAA STC SR01298NY 09/01/08, EASA STC EASA.IM.R.S.01304 07/03/06, DGAC MEXICO STC IA- 316/2015 15/06/17 *** WEAR LATEX GLOVES WHEN HANDLING CROSSTUBE*** Liquid Penetrant Inspection as per QSI 038 LPI as per ASTM 1417 Level 2 Attach copy of NDT results to work order	Firmed	-	9/20/19	1 pcs	0 pcs	1 pcs	\$152.50/pcs	\$152.50

PURCHASE ORDER



Dart Aerospace Ltd.
1270 Aberdeen St
Hawkesbury, ON
K6A 1K7
Canada

Tel (613) 632-5200

PURCHASE ORDER

POHB044535



Items											
Line Item	Job	Part	Description	Status	Account	Due Date	Order Quantity	Received Quantity	Balance	Unit Price (CAD)	Extended Price
6	99239	D212-664-101	Fwd Crosstube - High : TC STC SH01-9 Issue 3, FAA STC SR01298NY 09/01/08, EASA STC EASA.IM.R.S.01304 07/03/06, DGAC MEXICO STC IA- 316/2015 15/06/17 *** WEAR LATEX GLOVES WHEN HANDLING CROSSTUBE*** Liquid Penetrant Inspection as per QSI 038 LPI as per ASTM 1417 Level 2 Attach copy of NDT results to work order	Firmed	-	9/20/19	1 pcs	0 pcs	1 pcs	\$152.50/pcs	\$152.50
Grand Total:											\$915.00

Order Notes

Procurement Quality Clauses

A005 right of entry
A012 chemical and physical test report
A016 personnel qualification
A017 raw material identification (as applicable)

A022 Apical Processing
A024 process certifications
A026 certification of material conformance

A041 quality management system
A042 dart notification by supplier
A043 retention of quality documents

A048 counterfeit parts avoidance, detection, mitigation and disposition program

A049 supplier awareness

Terms & Condition of Purchasing(Suppliers) and Procurement Quality Clauses are an integral part of our AS9100 requirements. To learn in detail, please visit www.dartaerospace.com for further explanation.

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**skyservice****Work Order Traveler**

Sky Service F.B.O. Inc.

105 Ryan Avenue, Dorval, Quebec, H9P 1A2

TCCA AMO 53-89 / EASA 145.7142 / BDA AMO 385

WO #: MWO41837	Customer: Dart Aerospace Ltd.	Dept: NDT YUL	Reference: POHB044535
Descr:	PN:	S/N:	Qty: 1
Make:	Model:	Reg:	A/C S/N:
TSN:	CSN:	TSO:	
Task: UNSCHEDULED			Sequence: 1

Work Required:**CARRY OUT NDT ON:**

2 FWD CROSSTUBES , P/N: D212-664-101 , J/S: 199238 , 199239

2 AFT CROSSTUBES , P/N: D206-667-207BL , J/S: 200061 , 200062

2 FWD CROSSTUBES , P/N: D206-667-103 , J/S: 196105 , 196106

Action Taken:						Date:	Initial/Stamp:
LPI C/O IAW ASTM E-1417M-16						SEP 20 2019	 DOT-APP 20 53-89
NO CRACK FOUND							
PEN. ZL-56, MPO13600, CLEANER SKC-S MPO13923 , DEV. MPO11715 , UV LIGHT M-20142							
Description	Location	P/N	Qty	Batch	S/N Off	S/N On	

RECEIVED
SEP 20 2019
DART AEROSPACE LTD.

I certified that the maintenance described above has been performed in accordance with the applicable standard of airworthiness.

Signature:	ACA/SCA Stamp	Date:
Name: RAFIK MELIKIAN	DOT-APP 20 53-89	SEP 20 2019

5.0 PARTS LIST

5.1 HIGH GEAR CROSSTUBES

Item	Qty -101	Qty -201	Qty -103	Qty -203	Qty -105	Qty -205	Part Number	Description
	X						D206-667-101	CROSSTUBE INSTALLATION, 206A/B HIGH FWD
		X					D206-667-201	CROSSTUBE INSTALLATION, 206A/B HIGH AFT
			X				D206-667-103	CROSSTUBE INSTALLATION, 206L/L-1/L-3/L-4 HIGH FWD
				X			D206-667-203	CROSSTUBE INSTALLATION, 206L/L-1/L-3/L-4 HIGH AFT
					X		D407-667-105	CROSSTUBE INSTALLATION, 407 HIGH FWD
						X	D407-667-205	CROSSTUBE INSTALLATION, 407 HIGH AFT
1	1						D206-667-141	CROSSTUBE ASSEMBLY, 206A/B HIGH FWD
2		1					D206-667-241	CROSSTUBE ASSEMBLY, 206A/B HIGH AFT
3			1				D206-667-143	CROSSTUBE ASSEMBLY, 206L/L-1/L-3/L-4 HIGH FWD
4				1			D206-667-243	CROSSTUBE ASSEMBLY, 206L/L-1/L-3/L-4 HIGH AFT
5					1		D407-667-145	CROSSTUBE ASSEMBLY, 407 HIGH FWD
6						1	D407-667-245	CROSSTUBE ASSEMBLY, 407 HIGH AFT
10	*2	*2	*2		*2		D2891-1	SUPPORT
11				*2			D2892-1	SUPPORT
12						*1	D2894-1	SUPPORT
13	*4	*4	*4		*4		D3595-063-395	RUBBER CUSHION
14				*4			D3595-063-450	RUBBER CUSHION
15						*2	D3595-075-430	RUBBER CUSHION
16	*4	*4	*4		*4		MS21920-20	CLAMP
17				*4		*4	MS21920-22	CLAMP
18						*2	MS21920-25	CLAMP (OR MS21920-24)
19	4	4	4		4		AN5-32A	BOLT
20				4		4	AN5-34A	BOLT
21	4	4	4	4	4	4	MS21042L5	NUT (OR MS21042-5)
22	8	8	8	8	8	8	NAS1149C0563J	WASHER (OR AN960JD516)
23						*2	D3190-1	CHAFING SHIELD
40	*2		*2	*2	*2	*2	D2873-043	NUT PLATE
41	*2		*2	*2	*2	*2	D2873-045	NUT PLATE
42		2					D2872-043	NUT PLATE
43		2					D2872-045	NUT PLATE
44	10		10				AN5-7A	BOLT
45		10		10	10	10	AN5-10A	BOLT
46	4	10	4		4		AN5-30A	BOLT
47				4		4	AN5-32A	BOLT
48			12				AN970-4	WASHER (OPTIONAL)
49		6					MS21042L5	NUT (OR MS21042-5)
50	10	12	10	10	10	10	NAS1149C0563J	WASHER (OR AN960JD516)
60		1					D3039-3	CENTER DRILL (TOOLING, NOT INSTALLED)

*REFERENCE ONLY. PARTS ARE INCLUDED IN D206-667-141/-143/-241/-243 & D407-667-145/-245
ASSEMBLIES ABOVE

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Revision: D
Date: 11.05.01